

REMARKS/ARGUMENTS

Claims 1-5 are currently pending in this application. No claims have not been amended, added, or cancelled with the filing of this response.

Reconsideration of the application is respectfully requested in view of the following remarks.

Rejection under 35 U.S.C. § 112

The rejection of claims 1-5 were under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps, is respectfully traversed for reasons of record and the reasons indicated below.

Applicants assert that the Office has not shown that the specification or any other statements of record establish that any essential steps have been omitted from the present claims.

Specifically, according to the Office,

The claims are drawn to a process for hydrocyanating 1,3-butadiene over at least one nickel(0) catalyst having phosphorus ligands, but [the claimed process] fails to detail a step after the 1,3-butadiene is generated to hydrocyanate the 1,3-butadiene.

Additionally, the only examples in the specification are drawn to the hydrocyanation reaction, but not the dehydrogenation steps. Therefore, the hydrocyanation reaction is an essential step and feature in the invention and needs to be detailed in the process steps.

Office Action at page 2. (Emphasis added).

In response, Applicants point out that detailing/reciting a step after the 1,3-butadiene is generated to hydrocyanate the 1,3-butadiene is not necessary or required for understanding the presently claimed process. Further, examples are also not required in the specification, as long as the claims are clearly understood by one of ordinary skill in the art – in light of the specification.

As discussed by the Board of Patent Appeals and Interferences in *Ex parte Nakano et al.* - Appeal No. 98-0979 (1998) (“Nakano et al.”), “[i]f the scope of the invention sought to be patented can be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. § 112, second paragraph, is not appropriate.” Nakano et al. at pages 6-9.

In Nakano et al., the Office had asserted that the method claims were indefinite under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. *Id.* The Office alleged, among other things, that “[o]ne cannot perform the claimed invention since one cannot be certain of the steps required . . . In short, one must look to [the] patent specification and prosecution history since a doubt exists as to scope of claims. With such doubt one cannot clearly determine what applicant regards as his invention.” *Id.*

However, upon further review of the specification and record, the Board disagreed and found that the Office had not shown that the specification or any other statements establish that essential steps have been omitted from the claims. The Board pointed out that the claims fully apprise those skilled in the art of the scope of the invention claimed, and that breadth of a claim is not to be equated with indefiniteness.

Likewise, in the present case, Applicants submit that the present claims fully apprise those skilled in the art of the scope of the invention claimed, and that there is no indication that additional should be added. Therefore, the rejection is improper and should be withdrawn.

Rejection under 35 U.S.C. § 103

The rejection of claims 1-5 under 35 U.S.C. § 103(a) as obvious over Watson (GB-628686) in view of Arakawa et al. (US Patent No. 4,504,692) and Fischer et al. (US Patent No. 6,242,633) is respectfully traversed for reasons of record and indicated below.

An obviousness analysis requires that the Office make “a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art.” *See In re Ward and Murphy*, Appeal No. 2007-3733 (2007) (emphasis in original); *see also Ex parte Martin Haubner and Rolf Pinkos*, Appeal No. 2009-0449 (reversing an obviousness rejection and explaining that “in rejecting *process* claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a case of *prima facie* obviousness”) (emphasis added). Moreover, the Supreme Court has indicated, *inter alia*, that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” and a “reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1731, 1741

(2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); *see also Takeda Chem. Indus. v. Alphapharm Pty. Ltd.*, 492 F.3d 1350, 1356-57 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1731)).

In the present case, Applicants assert that when the features of the claimed process are compared to the disclosures of the references of record, it is evident that the claimed process differs from Watson and the secondary references, and there is no apparent reason that would have prompted a person of ordinary skill to combine process components or modify the references in the manner presently claimed.

In particular, as previously point out on the record, the Office acknowledges several deficiencies at least regarding Watson. For instance, the Office admits that the reference does not describe hydrocyanating 1,3-butadiene over at least one nickel(0) catalyst having phosphorus ligands, in which the process provides a mixture of from 60 to 90% by volume of 1,3-butadiene and from 40 to 10% by volume of n-butane. The Office also appreciates that there is no indication of the hydrocyanating reaction or where the second dehydrogenation is done oxidatively. Further, Applicants have also asserted the deficiencies regarding Arakawa et al. and Fischer et al.

However, in response to Applicants noting the indicated higher yield of butadiene in the present specification, the Office asserts that the higher is not persuasive. In particular, the Office asserts that there is no recitation of a quantitative measurement of that yield in comparison to other processes. In response, Applicants assert that that the point regarding the higher yield was made to point out that *only* the present specification provides any description or acknowledgement of any higher yield by the claimed process. By contrast, the Office has only made the conclusory statement, without any showing or guidance from the references, that by combining Watson with Arakawa et al. the yields would be maximized. As such, other improper hindsight of the present specification, there is no indication or apparent reason that one would conclude the Watson/Arakawa et al. combination would provide the results of the claimed process.

The Office also points out that Applicants have asserted that the distillation step advantageously removes a 1,3-butadiene/n-butane azeotrope; however the step does not require that an azeotrope or mixture be present. Applicants note, however, that even assuming *arguendo*

that the step does not require that an azeotrope or mixture be present, it still does not negate the fact that the Watson, alone or in combination with Arakawa et al. and Fischer et al., does not provide a two-stage n-butane dehydrogenation, i.e., a first on-oxidative n-butane dehydrogenation (1 B) and a subsequent oxidative dehydrogenation (1 C) – and followed by distillative removal (1 E). In other words, the Office cannot circumvent proving obviousness by merely pointing what the claim does not require, and not showing that the references describe or suggest every feature of the claims. Specifically, the Office cannot ignore legal precedent by (1) merely providing a conclusory statement to support the proposed combination, and (2) failing to provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (*See KSR*, 127 S.Ct. at 1741.) Therefore, for at least the above additional reasons, the rejection is improper. Accordingly, reconsideration and withdrawal is requested.

In view of the above remarks, Applicant believes the pending application is in condition for allowance.

The Office is authorized to charge any necessary fees to Deposit Account No. 03-2775.

Applicant believes no additional fee is due with this response. However, if an additional fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00311-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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